WHAT IS CLAIMED IS:

1   1.   An apparatus comprising:

2   a channel decoder (44), responsive to an encoded signal received over

3   a transmission channel (42), for providing a channel decoded signal (46); and

4   an iterative processor (52), responsive to the channel decoded signal

5   (46), for providing a synthesized speech signal (54) meeting typicality

6   standards which vary with channel quality deficiency.

1   2.   The apparatus defined in claim 1, wherein the iterative processor (52)

2   comprises:

3   a speech decoder with bad frame replacer (70), responsive to the

4   channel-decoded signal (46), for providing the synthesized speech signal (54);

5   and

6   a signal error analyzer (90), responsive to the synthesized speech

7   signal (54) and responsive to the channel decoded signal (46), for providing a

8   characteristics error signal (92) to which the speech decoder with bad frame

9   replacer (70) is responsive, wherein the signal error analyzer (90) applies

10   typicality standards which vary with channel quality deficiency.

1   3.   The apparatus defined in claim 1, wherein the iterative processor comprises:

2   a speech decoder with bad frame replacer (70), responsive to a speech

3   parameter signal (78) included in the channel-decoded signal (46), and responsive to a

4   bad frame substitution signal (88), for providing the synthesized speech signal (54);

5   a bad frame counter (82), responsive to a reset signal (84) and responsive to a

6   count signal (86), for providing the bad frame substitution signal (88);

7   a signal error analyzer (90), responsive to the channel-decoded signal (46) and

8   responsive to the synthesized speech signal (54), for providing the reset signal, and

9   for providing a characteristics error signal (92); and

10   a logical port (94), responsive to the characteristics error signal (92) and also

11   responsive to a bad frame indicator signal (96) included in the channel decoded signal

12   (46), for providing the count signal (86).

1   4.   The apparatus defined in claim 3, wherein the iterative processor (52) further

2   comprises a switch (98), responsive to a switch control signal (100) from the signal

3   error analyzer (90) and also responsive to the synthesized speech signal (54), for

4   selectively providing the synthesized speech signal (54).

1   5.   The apparatus defined in claim 3, wherein the iterative processor (52) further

2   comprises a decoder storage (102), responsive to a state signal (104) from the speech

3   decoder with bad frame replacer (70), for providing a state signal (104) back to the

4   speech decoder with bad frame replacer (70).

1   6.   The apparatus defined in claim 1, wherein the iterative processor (52) is also

2   directly responsive to the encoded signal received over a transmission channel (42).

1   7.   The apparatus defined in claim 1, wherein the apparatus is a mobile

2   communication device.

1   8.   The apparatus defined in claim 1, wherein the apparatus is a network element

2   in a wireless communication network.

1   9.   The apparatus defined in claim 8, wherein the network element is a base

2   station.

1   10.   An apparatus comprising:

2   a channel decoder (44), responsive to an encoded signal received over

3   a transmission channel (42), for providing a channel-decoded signal (46);

4   an iterative processor (52), responsive to the channel decoded signal

5   (46), for providing a synthesized speech signal (54) and for providing a

6   modification command signal (60); and

7   a synthesized signal modifier (58), responsive to the synthesized

8   speech signal (54) and to the modification command signal (60), for providing

9   a synthesized output signal (62) meeting typicality standards which vary with

10   channel quality deficiency.

1   11.   The apparatus defined in claim 10, wherein the apparatus is a mobile

2   communication device.

1   12.   The apparatus defined in claim 10, wherein the apparatus is a network element

2   in a wireless communication network.

1   13.   The apparatus defined in claim 12, wherein the network element is a base

2   station.

1   14.   The apparatus defined in claim 10, wherein the iterative processor (52)

2   performs only one iteration, without re-synthesis.

1   15.   The apparatus defined in claim 10, wherein the iterative processor (52)

2   comprises:

3   a speech decoder with bad frame replacer (70), responsive to the

4   channel-decoded signal (46), for providing the synthesized speech signal (54);

5   and

6   a signal error analyzer (90), responsive to the synthesized speech

7   signal (54) and responsive to the channel-decoded signal (46), for providing

8   the modification command signal (60).

1   16.   The apparatus defined in claim 15, wherein the iterative processor (52)

2   performs only one iteration, without re-synthesis.

1   17.   The apparatus defined in claim 10, wherein the iterative processor (52)

2   comprises:

3   a speech decoder with bad frame replacer (70), responsive to a speech

4   parameter signal (78) included in the channel-decoded signal (46), and responsive to a

5   bad frame substitution signal (26), for providing the synthesized speech signal (54);

6   a bad frame counter (82), responsive to a reset signal (84) and responsive to a

7   count signal (86), for providing the bad frame substitution signal (88);

8   a signal error analyzer (90), responsive to the channel-decoded signal (46) and

9   responsive to the synthesized speech signal (54), for providing the modification

10   command signal (60), for providing the reset signal (84), and for providing a

11   characteristics error signal (92); and

12   a logical port (94), responsive to the characteristics error signal (92) and also

13   responsive to a bad frame indicator signal (96) included in the channel decoded signal

14   (46), for providing the count signal (86).

1   18.   The apparatus defined in claim 17, wherein the iterative processor (52) further

2   comprises a switch (98), responsive to a switch control signal (100) from the signal

3   error analyzer (90) and also responsive to the synthesized speech signal (54), for

4   selectively providing the synthesized speech signal (54).

1   19.   The apparatus defined in claim 17, wherein the iterative processor (52) further

2   comprises a decoder storage (102), responsive to a state signal (104) from the speech

3   decoder with bad frame replacer (70), for providing a state signal (104) back to the

4   speech decoder with bad frame replacer (70).

1   20.   The apparatus defined in claim 17, wherein the iterative processor (52) is also

2   directly responsive to the encoded signal received over a transmission channel (42).

1   21.   A method comprising the steps of:

2   providing a channel-decoded signal (46) in response to an encoded signal

3   received over a transmission channel (42); and

4   executing an iterative signal processing step, in response to the channel-

5   decoded signal (46), for providing a synthesized speech signal (54) meeting typicality

6   requirements which vary with channel quality deficiency.

1   22.   The method defined in claim 21, wherein the iterative signal processing step

2   comprises the steps of:

3   providing the synthesized speech signal (54) in response to the

4   channel-decoded signal (46); and

5   providing a characteristics error signal (92) responsive to the

6   synthesized speech signal (54) and responsive to the channel-decoded signal

7   (46).

1   23.   The method defined in claim 21, wherein the iterative processing step is also

2   executed in direct response to the encoded signal received over a transmission channel

3   (42).

1   24.   A method comprising the steps of:

2   providing a channel-decoded signal (46) in response to an encoded signal

3   received over a transmission channel (42);

4   executing an iterative signal processing step, in response to the channel-

5   decoded signal (46), for providing a synthesized speech signal (54) and for providing

6   a modification command signal (60); and

7   providing a synthesized output signal (62) meeting typicality standards which

8   vary with channel quality deficiency, in response to the synthesized speech signal (54)

9   and also in response to the modification command signal (60).

1 25. The method defined in claim 24, wherein the iterative signal processing step is
2 executed only once, without re-synthesis.

1 26. The method defined in claim 24, wherein the iterative signal processing step
2 comprises the steps of:
3 providing the synthesized speech signal (54) in response to the channel-
4 decoded signal (46); and
5 providing the modification command signal (60) in response to the
6 synthesized speech signal (54) and also in response to the channel decoded signal
7 (46).

1 27. The method defined in claim 26, wherein the iterative signal processing step is
2 executed only once, without re-synthesis.

1 28. The method defined in claim 24, wherein the iterative processing step is also
2 executed in direct response to the encoded signal received over a transmission channel
3 (42).